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2015

## Nebraska Summary: S1023 Challenger MT585E

Nebraska Tractor Test Laboratory

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# SUMMARY OF OECD TEST 2916-NEBRASKA SUMMARY 1023

## CHALLENGER MT585E AP6 DIESEL

### 24 SPEED

#### POWER TAKE-OFF PERFORMANCE

Power HP (kW)	Crank shaft speed rpm	Diesel Consumption Gal/hr (l/h)	lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	D.E.F. Consumption Gal/hr (l/h)	Mean Atmospheric Conditions
MAXIMUM POWER AND FUEL CONSUMPTION						
Rated Engine Speed—(PTO speed—1088 rpm)						
201.0 (149.9)	2099	11.93 (45.15)	0.414 (0.252)	16.85 (3.32)	0.76 (2.88)	
Maximum Power (1 hour)						
217.2 (162.0)	1949	12.24 (46.34)	0.393 (0.239)	17.75 (3.50)	0.84 (3.17)	
Standard Power Take-off Speed (1000 rpm)						
216.6 (161.5)	1930	12.21 (46.21)	0.393 (0.239)	17.74 (3.50)	0.84 (3.18)	

#### VARYING POWER AND FUEL CONSUMPTION

201.0 (149.9)	2099	11.93 (45.15)	0.414 (0.252)	16.85 (3.32)	0.76 (2.88)	Air temperature
172.5 (128.6)	2118	10.33 (39.12)	0.418 (0.254)	16.70 (3.29)	0.61 (2.32)	75°F (24°C)
129.9 (96.9)	2128	8.11 (30.70)	0.435 (0.265)	16.02 (3.16)	0.45 (1.71)	Relative humidity
87.0 (64.9)	2136	6.05 (22.88)	0.486 (0.295)	14.39 (2.83)	0.38 (1.43)	52%
43.7 (32.6)	2146	4.07 (15.42)	0.651 (0.396)	10.73 (2.11)	0.23 (0.87)	Barometer
--	2153	2.38 (9.01)	--	--	--	30.2" Hg (102.2 kPa)

Maximum torque - 737.3 lb.-ft. (999.6 Nm) at 1150 rpm  
Maximum torque rise - 46.5%  
Torque rise at 1700 engine rpm - 23%  
Power increase at 1950 engine rpm - 8.1%

#### DRAWBAR PERFORMANCE (Unballasted - Front Drive Engaged) FUEL CONSUMPTION CHARACTERISTICS

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Hp.hr/gal (kW.h/l)	Temp. °F (°C) cool- ing med	Air dry bulb	Barom. inch Hg (kPa)
Power at Rated Engine Speed—13th(3B) Gear									
170.4 (127.1)	10745 (47.8)	5.95 (9.57)	2096	5.2	0.484 (0.295)	14.30 (2.82)	190 (88)	86 (30)	29.9 (101.4)
75% of Pull at Rated Engine Speed—13th(3B) Gear									
132.1 (98.5)	8050 (35.8)	6.15 (9.90)	2128	3.7	0.535 (0.325)	12.94 (2.55)	190 (88)	86 (30)	29.9 (101.4)
50% of Pull at Rated Engine Speed—13th(3B) Gear									
90.7 (67.6)	5445 (24.2)	6.25 (10.05)	2134	2.2	0.650 (0.396)	10.65 (2.10)	187 (86)	86 (30)	30.0 (101.5)
75% of Pull at Reduced Engine Speed—15th(3C) Gear									
131.8 (98.3)	8070 (35.9)	6.13 (9.86)	1829	3.8	0.482 (0.293)	14.37 (2.83)	189 (87)	86 (30)	30.0 (101.5)
50% of Pull at Reduced Engine Speed—15th(3C) Gear									
91.2 (68.0)	5440 (24.2)	6.29 (10.12)	1834	2.2	0.510 (0.310)	13.60 (2.68)	185 (85)	86 (30)	30.0 (101.5)

**Location of tests:** IRSTE, Centre d'Antony, 1 rue Pierre-Gilles de Gennes CS 10030 Antony, 92163, Cedex, France

**Dates of tests:** July to August, 2015

**Manufacturer:** AGCO S.A. BP 307, Avenue Blaise Pascal, 60026 Beauvais, France

**CONSUMABLE FLUIDS:** Fuel No. 2 Diesel Specific gravity converted to 60°/60°F (15°/15°C) 0.838 Fuel weight 6.98 lbs/gal (0.836 kg/l) Diesel Exhaust Fluid (DEF) 32% aqueous urea solution DEF weight 9.10 lbs/gal (1.091 kg/l) Oil SAE 15W40 API service classification CJ-4 Transmission and hydraulic lubricant BP Terrac Tractan 9 15W/40 Front axle lubricant BP Terrac Tractan 9 15W/40

**ENGINE:** Make AGCO Power Diesel Type six cylinder vertical with turbocharger, air to air intercooler and SCR (selective catalyst reduction) exhaust treatment Serial No. Y00233 Crankshaft lengthwise Rated engine speed 2100 Bore and stroke 4.252" x 5.276" (108.0 mm x 134.0 mm) Compression ratio 17.8 to 1 Displacement 449 cu in (7365 ml) Starting system 12 volt Lubrication pressure Air cleaner two paper elements Oil filter one full flow cartridge Oil cooler engine coolant heat exchanger for crankcase oil, radiator for hydraulic and transmission oil Fuel filter three paper cartridges Muffler vertical Cooling medium temperature control thermostat and variable speed fan

**CHASSIS:** Type front wheel assist Serial No. D 119901 Tread width rear 52.8" (1340 mm) to 87.8" (2230 mm) front 52.8" (1340 mm) to 87.8" (2230 mm) Wheelbase 117.0" (2973 mm) Hydraulic control system direct engine drive Transmission selective gear fixed ratio with partial (6) range operator controlled powershift Nominal travel speeds mph (km/h) first 0.99 (1.60) second 1.19 (1.92) third 1.40 (2.25) fourth 1.68 (2.71) fifth 1.98 (3.19) sixth 2.39 (3.84) seventh 2.68 (4.32) eighth 3.23 (5.19) ninth 3.78 (6.09) tenth 4.55 (7.33) eleventh 5.14 (8.27) twelfth 5.36 (8.62) thirteenth 6.18 (9.94) fourteenth 6.45 (10.38) fifteenth 7.25 (11.67) sixteenth 8.72 (14.04) seventeenth 10.26 (16.51) eighteenth 12.35 (19.87) nineteenth 14.26 (22.95) twentieth 17.15 (27.60) twenty-first 20.13 (32.39) twenty-second 24.22 (38.98) twenty-third 24.86 (40.00) twenty-fourth 24.86 (40.00) electronically limited reverse 0.99 (1.60), 1.19 (1.92), 1.40 (2.25), 1.68 (2.71), 1.98 (3.19), 2.39 (3.84), 2.68 (4.32), 3.23 (5.19), 3.78 (6.09), 4.55 (7.33), 5.14 (8.27), 5.36 (8.62), 6.18 (9.94), 6.45 (10.38), 7.25 (11.67), 8.72 (14.04) 10.26 (16.51), 12.35 (19.87), 14.26 (22.95), 17.15 (27.60), 20.13 (32.39), 24.22 (38.98), 24.86 (40.00), 24.86 (40.00) electronically limited

**DRAWBAR PERFORMANCE**  
**(Unballasted - Front Drive Engaged)**  
**MAXIMUM POWER IN SELECTED GEARS**

Power Hp (kW)	Drawbar pull lbs (kN)	Speed mph (km/h)	Crank- shaft speed rpm	Slip %	Fuel Consumption lb/hp.hr (kg/kW.h)	Temp.*F(°C) cool- ing med	Barom. inch Hg (kPa)		
3rd(1C) Gear									
59.4 (44.3)	18120 (80.6)	1.23 (1.98)	2137	15.0	0.654 (0.398)	10.60 (2.09)	180 (82)	77 (25)	29.9 (101.4)
4th(1D) Gear									
72.0 (53.7)	17805 (79.2)	1.52 (2.44)	2133	13.0	0.614 (0.373)	11.29 (2.22)	181 (83)	77 (25)	29.9 (101.4)
5th(1E) Gear									
84.1 (62.7)	17155 (76.3)	1.84 (2.96)	2131	10.0	0.578 (0.352)	11.98 (2.36)	181 (83)	79 (26)	29.9 (101.4)
6th(1F) Gear									
100.2 (74.7)	16885 (75.1)	2.23 (3.58)	2128	9.0	0.561 (0.341)	12.34 (2.43)	187 (86)	79 (26)	29.9 (101.4)
7th(2A) Gear									
113.5 (84.6)	16905 (75.2)	2.52 (4.05)	2124	9.1	0.531 (0.323)	13.05 (2.57)	189 (87)	79 (26)	29.9 (101.4)
8th(2B) Gear									
136.0 (101.4)	16950 (75.4)	3.01 (4.84)	2114	9.2	0.515 (0.313)	13.45 (2.65)	189 (87)	81 (27)	29.9 (101.4)
9th(2C) Gear									
151.4 (112.9)	16320 (72.6)	3.48 (5.60)	2058	8.0	0.496 (0.302)	13.96 (2.75)	192 (89)	81 (27)	29.9 (101.4)
*10th(2D) Gear									
164.0 (122.3)	15175 (67.5)	4.05 (6.52)	1986	6.6	0.496 (0.302)	13.96 (2.75)	192 (89)	81 (27)	29.9 (101.4)
*11th(3A) Gear									
181.8 (135.6)	15220 (67.7)	4.48 (7.21)	1953	6.7	0.469 (0.285)	14.77 (2.91)	194 (90)	84 (29)	29.9 (101.4)
*12th(2E) Gear									
177.3 (132.2)	14075 (62.6)	4.72 (7.60)	1950	6.0	0.477 (0.290)	14.57 (2.87)	192 (89)	82 (28)	29.9 (101.4)
*13th(3B) Gear									
184.9 (137.9)	12815 (57.0)	5.41 (8.71)	1940	5.5	0.459 (0.279)	15.08 (2.97)	192 (89)	86 (30)	29.9 (101.4)
*14th(2F) Gear									
182.6 (136.2)	11780 (52.4)	5.81 (9.36)	1965	5.0	0.467 (0.284)	14.82 (2.92)	194 (90)	84 (29)	29.9 (101.4)
*15th(3C) Gear									
186.4 (139.0)	10610 (47.2)	6.59 (10.60)	1955	4.7	0.459 (0.279)	15.08 (2.97)	192 (89)	86 (30)	30.0 (101.5)
*16th(3D) Gear									
184.7 (137.7)	8655 (38.5)	8.00 (12.88)	1964	3.8	0.458 (0.279)	15.13 (2.98)	192 (89)	86 (30)	30.0 (101.5)
*17th(3E) Gear									
179.7 (134.0)	7105 (31.6)	9.50 (15.27)	1964	3.0	0.482 (0.293)	14.37 (2.83)	190 (88)	88 (31)	30.0 (101.5)
*18th(3F) Gear									
172.3 (128.5)	5690 (25.3)	11.36 (18.28)	1963	2.0	0.500 (0.304)	13.86 (2.73)	192 (89)	89 (32)	30.0 (101.5)

\*Powerboost mode

**TRACTOR SOUND LEVEL WITH CAB**

	<b>Front wheel drive</b>	
	<b>Engaged</b>	<b>Disengaged</b>
	<b>dB(A)</b>	<b>dB(A)</b>
At no load in 10th (2D) gear	70.0	69.0
Bystander		--

**TIRES, BALLAST AND WEIGHT**

Rear Tires - No., size, ply & psi(kPa)  
Front Tires - No., size, ply & psi(kPa)  
Height of Drawbar  
Static Weight with operator - Rear  
- Front  
- Total

**Tested without ballast**

Two 650/85R38; \*\*,15(100)  
Two 600/70R28; \*\*,16(110)  
23.6 in (600 mm)  
11665 lb (5290 kg)  
8345 lb (3785 kg)  
20010 lb (9075 kg)

**Clutch** multiple wet disc operated by foot pedal  
**Brakes** multiple wet disc hydraulically operated by two foot pedals that can be locked together  
**Steering** hydrostatic **Power take-off** 540 rpm at 1890 engine rpm or 1000 rpm at 1930 engine rpm **Unladen tractor mass** 19840 lb (9000 kg)

**REPAIRS AND ADJUSTMENTS:** No repairs or adjustments.

**NOTE 1:** This tractor has a power management system that provides an engine power increase when the PTO is engaged and for travel speeds from gear 2D and higher.

**NOTE 2:** The data on this summary was obtained from OECD report 2916 conducted on the Massey Ferguson 7724 Dyna 6 Diesel.

**REMARKS:** All test results were determined from observed data obtained in accordance with official OECD test procedures. The performance figures on this summary were taken from a test conducted under the OECD Code 2 test procedure.

We, the undersigned, certify that this is a true summary of data from OECD Report No. 2916, Nebraska Summary 1023, June 16, 2016.

Roger M. Hoy  
Director

M.F. Kocher  
J.D. Luck  
P.J. Jasa  
Board of Tractor Test Engineers

## HYDRAULIC PERFORMANCE

CATEGORY: III

Quick Attach: None

OECD Statitest

Maximum force exerted through whole range: 13920 lbs (61.9 kN)  
 i) Sustained pressure of the open relief valve: 2700 psi (186 bar)

Standard Pump

29 GPM (110 l/min)

two outlet sets combined

30.7 GPM (116.2 l/min)

Optional pump

39 GPM (150 l/min)

two outlet sets combined

42.1 GPM (159.2 l/min)

ii) Pump delivery rate at minimum pressure:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

29.2 GPM (110.5 l/min)

1990 psi (137 bar)

33.9 HP (25.2 kW)

single outlet set

30.2 GPM (114.2 l/min)

38.6 GPM (146.3 l/min)

1820 psi (126 bar)

41.0 HP (30.6 kW)

single outlet set

29.6 GPM (112.0 l/min)

ii) Pump delivery rate at minimum pressure:

iii) Pump delivery rate at maximum

hydraulic power:

Delivery pressure:

Power:

28.6 GPM (108.3 l/min)

1975 psi (136 bar)

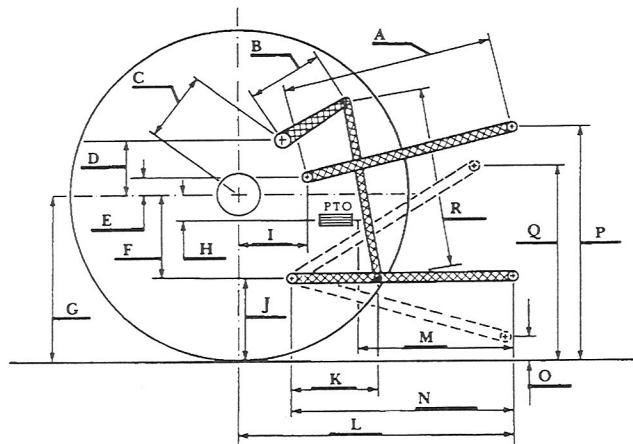
32.9 HP (24.5 kW)

27.0 GPM (102.1 l/min)

1945 psi (134 bar)

30.6 HP (22.8 kW)

### HITCH DIMENSIONS AS TESTED—NO LOAD



	inch	mm
A	31.1	790
B	15.7	400
C	20.7	525
D	19.1	485
E	8.3	210
F	12.2	310
G	38.4	975
H	2.0	50
I	17.7	450
J	26.2	665
K	23.3	591
L	48.3	1228
M	23.6	600
N	38.2	970
O	9.3	235
P	44.7	1135
Q	40.0	1017
R	39.4	1000